

PATENT COOPERATION TREATY

PCT

WIPO

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2112c	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. PCT/AU2003/000819	International Filing Date (day/month/year) 27 June 2003	Priority Date (day/month/year) 27 June 2002
International Patent Classification (IPC) or national classification and IPC Int. Cl. 7 B65D 47/06		
Applicant KRATZER, Oliver Clemens Robert		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 10 sheet(s).

3. This report contains indications relating to the following items:

- I Basis of the report
- II Priority
- III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV Lack of unity of invention
- V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI Certain documents cited
- VII Certain defects in the international application
- VIII Certain observations on the international application

Date of submission of the demand 19 November 2003	Date of completion of the report 1 October 2004
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer AMOD PRADHAN Telephone No. (02) 6283 2510

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/AU2003/000819

I. Basis of the report

1. With regard to the elements of the international application:*
 - the international application as originally filed.
 - the description, pages , as originally filed,
pages , filed with the demand,
pages 1 – 9, received on 19 November 2003 with the letter of 17 November 2003
 - the claims, pages , as originally filed,
pages , as amended (together with any statement) under Article 19,
pages , filed with the demand,
Page 10 received on 19 November 2003 with the letter of 17 November 2003
 - the drawings, pages 1/10 – 10/10, as originally filed,
pages , filed with the demand,
pages , received on with the letter of
 - the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
pages , received on with the letter of
2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language which is:
 - the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
 - the language of publication of the international application (under Rule 48.3(b)).
 - the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).
3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
 - contained in the international application in written form.
 - filed together with the international application in computer readable form.
 - furnished subsequently to this Authority in written form.
 - furnished subsequently to this Authority in computer readable form.
 - The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 - The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished
4. The amendments have resulted in the cancellation of:
 - the description, pages
 - the claims, Nos.
 - the drawings, sheets/fig.
5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	YES
	Claims 1 – 5	NO
Inventive step (IS)	Claims	YES
	Claims 1 – 5	NO
Industrial applicability (IA)	Claims 1 – 5	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)

NOVELTY (N) & INVENTIVE STEP (IS)

Claims 1 – 5

The invention defined in the present claims is not considered to be novel or inventive over the documents cited in the International Search Report (ISR) of 27 August 2003.

See for example, AU 676820 (50794/96) which is considered to be the most relevant prior art document. The document explicitly discloses the invention as defined in the present claims. See figures 1 – 10 of this document.

See also US 5568879 which discloses a versatile and a universal paint can attachment.

INDUSTRIAL APPLICABILITY (IA)

Claims 1 – 5

The invention defined in the present claims is suitable for industrial application.

See Box VI. – Certain Documents Cited

A POURING AND SEALING ATTACHMENT

TECHNICAL FIELD

This invention relates to a new pouring and sealing attachment of the kind adapted
5 to be mounted on a can and, more particularly, a paint can, but not limited thereto.

BACKGROUND ART

Paint can attachments are well known for a variety of purposes. There are two
broad types of paint pouring attachments, including a clip on spout, which
facilitates pouring only, and a decanting spout which is usually formed as part of a
10 container lid (e.g. as used with automotive tints). However, they must be removed
to reseal the container, and the stacking of containers with a spout is not possible.

Paint can attachments may also function as a brush wiper for removing excess
paint from the brush after it has been dipped into the paint and usually also
facilitates the outpouring of paint from the can.

15 However, most known attachments suffer from the disadvantage that they must be
detached from the can to facilitate reclosing thereof which is necessary to prevent
the deterioration of any remaining paint and to prevent the ingress of
contaminants. This step is time consuming and can be very messy.

USA patent 5,568,879 discloses an add-on product which sits atop an existing,
20 fully featured (ie with metal handle, lid and triple-tite ring) paint tin. It is a stand-
alone product which would be applied by the user. It offers no cost or feature
advantage to a paint manufacturer, and increases the overall expense of the
package to the end-user. After use, the spout / paintbrush-rest would be covered in
wet paint and it would act as a dust and dirt collection area, contaminating paint
25 when next used.

Australian patent 676820 discloses a stand-alone product, which is, also attached
to an existing, fully featured, paint tin. It uses the existing metal paint lid and does
not have provisions for it draining or being retained. It would normally be
purchased separately by the consumer. It does not have a cover for the pouring
30 spout. It is not nestable in a palletising sense in its current configuration and does
not offer any advantage to paint manufacturers, only to consumers. There is no
provision for a handle.

WO 00/51908 discloses a top for a beverage can which is intended to be an additional item attached by the consumer. It is not suitable for use with a wide mouth container having a lid. Again it adds additional cost.

5 WO 03/045809 discloses a closure that seats on the external face of a container rim. It is intended for use with beverages and is unsuitable for a wide mouth container such as a paint tin. There is no provision for a handle.

10 WO 98/19918 discloses a fitting for a container such as a gable topped container which is not suitable for lidded container and does not disclose means for securing the fitting to the rim of a wide mouthed container. There is no provision for a handle.

Prior art such as Australian patent 737661, USA patents 4724979, 5975346, and 6360909 and WO 02/49931 disclose containers with hinged lids which have inherent design faults which restrict their use in the sealing and resealing of fluid products (liquids or powders).

15 Australian Patent 638039 discloses a container with an adaptor ring that encloses the rim of the container and which carries a lid. There is no pouring spout and the arrangement does not include a handle.

WO9515861 has a similar design but again is unable to provide an inexpensive arrangement which can provide a pouring spout and a handle.

20 It is an object of the present invention to provide an alternative pouring and sealing attachment for a container, such as a paint can or other similar can, which overcomes or at least ameliorates the above disadvantages of the prior art, or at least provides a clear alternative choice for consumers.

25 **DISCLOSURE OF THE INVENTION**

According to one embodiment of the invention there is provided a pouring attachment adapted to be mounted on an annular rim of a can and which receives a lid allowing sealing and re-sealing of said can with said lid, said pouring attachment including an outer annular rim defining an annular space and inner 30 circumferential wall against which lid sealingly abuts and lid retaining means for releasably securing the lid in the annular space for sealing and resealing of the can. The invention also relates to containers which include a pouring attachment of the type described.

The lid is a purpose-built lid for the pouring attachment, ideally integrally moulded therewith from solvent-resistant plastics material.

In one embodiment the present invention provides a container and lid combination comprising

- 5 a) a container having a bottom and an upstanding wall having a rim at the open end
- b) a closure element adapted to seat on the rim, said element having an internal flange that abuts and sealingly engages the internal edge of the rim
- c) a lid attached to the closure element and having a dependent internal flange adapted to sealingly engage an internal edge of the closure element
- 10 d) a handle attached to the closure element.

This arrangement avoids the necessity to form a complex rim such as the conventional triple tight seal in metal cans. A simple container may be formed with a bottom either in metal or synthetic plastic. To provide rigidity to the rim the edge 15 may be turned inwardly, flanged or beaded if made in plastic. An outwardly directed corrugation may be provided below the rim to stiffen the container rim and protect the clips and other protruding features. An outwardly directed corrugation may be provided below the rim to stiffen the container rim. This container construction enables cost savings in the manufacture of the container.

- 20 The provision of a closure element enables this part to be separately manufactured in plastic by injection moulding. The closure element preferably has an external dimension no greater than the external dimension of the container at the corrugation below the rim so that the corrugation makes it difficult to accidentally dislodge the closure element. The flange of the closure element preferably 25 incorporates a peripheral bead on its outer face to seat below the container rim and provide aggressive retention of the closure element on the container. The internal face of the closure element flange may incorporate a sealing bead or preferably a downwardly inclined sealing flange to abut the flange of the lid. The closure element may incorporate a pouring spout to allow decanting of the 30 container contents. Preferably, the outer edge of the closure element incorporates a forwardly or outwardly extending pouring spout and a brush-wipe edge extending radially inwardly towards the central annular space of the closure element. When a

pouring spout is incorporated into the closure element the internal sealing bead varies in height to ensure that it lies below the edge of the internal wiping edge.

A handle is attached to the closure element and allows the full container to be

5 lifted. The handle may be attachable to the closure element by having the ends of the handle engage a slot in the closure element. Alternatively the ends of the handle may include a slot such as a key hole slot to engage a headed spigot moulded onto the closure elements rim. The handle is preferably integrally moulded with the closure element and the material is sufficiently flexible and
10 strong to allow the handle to be raised and hinged at the junction of the handle ends to the closure element. The handle is preferably positioned to facilitate pouring from the container.

A lid may be integrally moulded with the closure element or may be removably

attachable by a pin hinged or trunnion or clip structure to the retainer element. The

15 lid incorporates a dependent flange which wipes past the internal sealing bead on the flange of the closure element and extends past the sealing bead. The dependent peripheral flange preferably is shaped to allow the lid to drain any contents back into the container. Preferably, the lid includes means whereby the lid may be propped open substantially perpendicular (from about 80° to about 90°) to
20 the plane of the outer rim of the pouring attachment, to facilitate self-draining of paint from the underside of the lid back into the main container. To allow the lid to have one or more set positions, the lid hinges from the closed position to the open position(s) with the aid of an inbuilt cam and cam follower means. The lid may use any conventional hinge structure and may be permanently fixed to the closure

25 element or if preferred the lid can be detachable from the closure element. This enables the end user to decide to remove the lid or retain the lid. A retained lid with fixed open positions does not interfere in the movement of the brush into and out of the can and allows any paint wiped onto the internal lid surface to drip back into the can.

30 The closure of the lid is supplemented by one or more clips peripherally spaced about the outer edge of the closure element to securely hold the lid in sealing engagement with the closure element. These clips are dimensioned to not extend significantly beyond the periphery defined by the widest part of the container.

When the closure rim incorporates a spout the lid may have an extension to close over the edge of the spout.

From a point of view of the manufacturer and retailer it is important that for shipping and storage that the external dimensions of the container are the same as the conventional container of equivalent volume so that the number of containers per pallet is not reduced. Accordingly the external dimensions of the spout preferably lie within the widest periphery of the container body so that the pallet footprint of the container and lid is not increased. The lid may incorporate an upstanding peripheral rim on its upper surface to engage the bottom of a container to facilitate positive nesting when stacking of the containers on a pallet or at point of sale.

BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWINGS

The invention will be further described with reference to the accompanying drawings relating to some non-limiting embodiments of the invention:-

FIG. 1 is a top perspective view of a container, such as a paint can, according to one embodiment of the present invention wherein the upper end closure of the can includes a closure element with integral spout and a hinged lid for sealing/re-sealing of the container, and hinged lid retaining clips. The peripheral groove on the upper outer surface of the lid facilitates stackability or nesting;

FIG. 2 is a top perspective view of the container of Fig. 1 with the lid hinged in the open position;

FIG. 3 is a cross-sectioned side elevational view of the container of Fig. 2, with the lid in the open position;

FIG. 4 is a cross-sectioned side elevational view of the container of Fig. 1, with the lid in the closed position;

FIG. 5 is a top plan or top elevational view of retaining element and lid of Figs. 1-4, with the lid hinged fully open;

FIG. 6 is a side elevational view of the closure of Fig. 5;

FIG. 7 is a cross-sectioned side elevational view of the closure of Fig. 6;

FIG. 8 is a cross-sectioned side elevational view through the hinge of Fig. 5;

FIG. 9 is an enlarged cross-sectioned elevational view through a typical section of the upper rim of the container and upper end closure in the closed position.

FIG. 10 is an enlarged cross-sectional elevation view through a section of the upper rim of the container with the closure element and lid hinged in the open position.

FIG. 11 is a top perspective view of two containers according to an embodiment of

5 the invention, demonstrating vertical stackability.

In the drawings, the following legend applies to the use of reference numerals.

LEGEND

1. Container with closure (e.g. paint can)
2. Container body
- 10 3. Upper end closure
4. Annular closure element
5. Lid
- 5a. Pouring spout
6. Spout cover
- 15 7. Clip
8. Clip engagement lug
9. Hinge
10. Annular groove
11. Base rim
- 20 12. Handle
13. Handle hinge
14. Upper face of lid (with brand logo)
15. Annular opening
16. Inner rim
- 25 17. Sealing flange
18. Draining rim of flange
19. Paint drops
20. Rolled lip
21. Lid held in draining position
- 30 22. Sealing flange for spout on lid
23. Sealing flange on closure element
24. Sealing extension on lid for spout
26. Sealing face on lid

- 28. Camming surface
- 29. Lid engagement means (open position)
- 30. Nesting engagement ramps

5 The embodiment illustrated in the drawings is a paint container 2 formed from tin plate with a closure 3 formed from polypropylene comprising a closure element 4 and lid 5. The container body 2 is formed from metal with a bottom formed with a base rim 11 and the rim at the open end formed with a rolled lip 20 and an outwardly projecting corrugation located below it. It is within the scope of this

10 invention to use a synthetic plastic container body formed from a high density polyolefine such as high density polyethylene or polypropylene or polyethyleneterphthalate (PET) .

15 The closure element 4 defines an annular opening 15 into the container body 2 formed by the flange 16 which defines the inner face of the retainer element and seats on the rolled lip 20 . As shown in figures 3 and 4 the closure element s maximum external diameter below the rolled lip is less than the internal diameter of the container body 2. A bead on the outer face of the flange 16 snaps in below the rolled lip 20 to retain the element 4 on the container body 2. The element 4 incorporates a pouring spout 5A which is positioned below the height of the rim of

20 the retaining element 4 to facilitate the flow of the liquid contents from the container. The sealing strip 23 which is positioned just below the upper internal edge of the flange 16 of the closure element, follows the contour of the spout 5A in the element 4 and provides a wiping edge behind the spout 5A.

25 An optional handle is provided, which folds up for use in carrying the container, and which may be folded down to either the spout side or to the opposite side of the container when not in use. The handle 12 is attached to the closure element 4 by a hinge 13 which may be a conventional pin hinge or may be provided by an integrally moulded handle. The handle is strong enough to support the weight of the filled container and the frictional grip of the bead on flange 16 below the rolled

30 lip 20 is also sufficient to ensure that the filled container can be lifted using the handle 12.

The lid 5 is attached to the closure element 4 by the hinge arrangement 9. The hinge 9 as illustrated in figures 7 and 8 is injection moulded for retention on the

retaining element. As shown in figure 10 the lid incorporates a mating member 29 that engages the camming surface 28 on the retaining element so that the lid can assume a number of set positions such as 80° or 90° or any other angle.

Preferably the hinge 9 is of a type that allows the lid 5 to be detached from the

5 closure element 4. The lid incorporates a dependent flange 17 which is sufficiently deep adjacent the hinge 9 to ensure that the draining flange 18 projects beyond the internal edge of the closure element flange 16 so that any paint 19 on the lid 5 will drip back into the container as shown in figure 3. The portion 26 of flange 17 (shown in figure 9) aggressively abuts the strip 23 to provide a tight seal about the 10 opening 15. To secure the lid 5 tightly to the closure element 4 the lid incorporates clips 7 which snap over the retaining lugs 8 on the outer edge of the element 4.

The lid incorporates a spout cover 6 that encloses the spout 5A when the lid is closed. The contour of the edge of the flange 17 follows that of the sealing strip 23 so that the edge 22 abutting the wiping edge of the spout seals the lid against the 15 edge of the spout 5A when the lid is closed.

The lid incorporates a bearing surface 10 to take the weight of a stacked container and the lugs 30 locate the base of a container when the containers are stacked.

One or more of the positive action clips could include a tamper-evident seal, as could the handle or the pouring-spout in combination with its cover.

20 The components of the closure are suitably fabricated by standard injection moulding techniques using a polyolefine preferably a high density polypropylene or polyethylene. .

Some of the main features and benefits of the invention when applied to paint containers are summarized as follows:

25

- easy controlled pouring – no drips or runs down the side of the can;
- paint is not trapped in the rim of the can – the sealing edge is self-draining;
- large opening to allow proper stirring, mixing and the use of large brushes;
- self-draining straight-edge for controlled brush wiping;
- interlocks when stacking cans on top of each other (pallet, retail-display or at 30 home);
- lid is locked positively into position by clips - does not rely on friction;
- does not increase packaging pallet footprint;
- provides a self-draining seat for the lid while in use;

- integrated cover or lid prevents contact and dirt ingress to all surfaces covered with paint;

- works with paint tins with handles on the body if so desired;

- does not rust and is solvent resistant when made from suitable polymer;

5 • resilient polymeric construction retains shape even when dropped

Although the invention has been described with reference to paint containers it is not limited thereto. The invention is also suitable for the packaging of other fluid products, including both liquids and powders. The invention is also adaptable to the packaging of other products in general.

10 Although an exemplary embodiment of the invention has been shown and described, it will be apparent to those having ordinary skills in the art that a number of changes, modifications or alterations to the invention described herein may be made, none of which depart from the spirit of the present invention. All such changes, modifications and alterations should therefore be seen as being within the
15 scope of the present invention.

It should be apparent that the present invention provides a substantial advance in the field of container manufacture, providing all of the herein-described advantages without incurring any relative disadvantages.

CLAIMS

1. A pouring attachment adapted to be mounted on an annular rim of a container and which receives a lid allowing sealing and re-sealing of the container with said lid, said pouring attachment including an outer annular rim defining an annular space or opening and an inner circumferential wall against which the lid sealingly abuts, and lid retaining means for releasably securing the lid in the annular space for the sealing and re-sealing of the can.
- 10 2. A pouring attachment according to claim 1 wherein the lid is hingedly attached to the annular rim of the pouring attachment.
3. A pouring attachment according to claim 1 or claim 2 substantially as hereinbefore described and illustrated.
4. A container including a pouring attachment as defined in any one of the previous claims.
- 15 5. A container according to claim 4 substantially as hereinbefore described and illustrated.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/AU2003/000819

VI. Certain documents cited

1. Certain published documents (Rule 70.10)

Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
[P,X] WO 2003/045809	5 June 2003	27 November 2002	30 November 2001

With regard to the document(s) listed in Box VI under "Certain Documents Cited", these are documents published prior to the international filing date but later than the priority date claimed but which would otherwise be considered to be of particular relevance in assessing novelty of the present claims. See entire document

Under the PCT, novelty is considered only in respect of documents published before the priority date. The relevance of a document published after the priority date is dependent upon national law. Such documents are excluded from consideration in preliminary examination, under the PCT Guidelines but have been included here for information.

2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non-written disclosure (day/month/year)